

## Digital Bangladesh for Coping with Globalization

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### Abstract

Globalization is a process by which entire world is gradually becoming a digital planet. There is clearly a bright future for applying ICT in Bangladesh, to improve the delivery of Government services to the people, improve the efficiency in functioning of Government agencies, and reduce cost of doing business, in order to further accelerate economic growth and poverty reduction. After the agricultural and industrial revolutions, the new millennium has been celebrating another revolution which entirely different kind is taking place across the globe; it is nothing but information technology (ICT). The wave of the revolution has also touched the developing countries like Bangladesh with massive changes by using the different implementation of Digital Bangladesh.

### INTRODUCTION

No invention has changed our lifestyle as pervasively as the computers. It is just 60 years when the world's first stored program computer invented at the University of Manchester. The civilization we are living can be considered as fully mechanized. Computer can enable the visualization of real world due to incorporating Information Technology (IT) in globalization.

Information Technology (IT) is a driving factor in the process of globalization. Improvements in the early 1990s in computer hardware, software and telecommunications have caused widespread improvements in access to information and economic potential. These advances have facilitated efficiency gains in all sectors of economy [9]. IT provides the communication network that facilitates the expansion of products, ideas and resources among nations among people regardless of geographic locations. Creating efficient and effective channels to exchange information, IT has been the pioneer for global integration.

The use of computer raises dynamics in our social, economical, business and daily life, enabling economic growth also. Now computer uses high-tech algorithms like belief rule based theory, evidential reasoning theory, multi-criteria decision theory etc [2]. All of these algorithms can optimize uncertainty in business, predict financial crisis, predict stock market, and make the best decision.

Uses of computer applications like e-commerce open an avenue in international trade. Today millions of e-commerce websites are engaging with overseas trade. E-commerce is the name given to the business process of selling products, goods and services over the web [6].

Computer enable faster communication, reducing manpower, save time and money, raises economic growth. Though sometimes it can causes financial crisis. Computer virus is some sort of the most ridiculous factor. It is responsible for all of the stated malicious activities that raises financial crisis in economy.

### GLOBALIZATION AND INFORMATION TECHNOLOGY

Globalization is a process of interaction and integration among the people, companies, and governments of different nations, a process that is an inevitable phenomenon in human history that's been bringing the world closer through information, knowledge, culture and exchange of goods [5]. This process has effects on the environment, on culture, on political systems, on economic development and prosperity, and on human physical well-being in societies around the world. Among many forms of globalization there is information and knowledge access and sharing.

IT, in the globalization context, is all about global knowledge, access, participation and governance in the information age. Satellite Internet connectivity and other wireless technologies eliminate the need for telephones

for dial-up access, thus Internet connectivity has expanded strongly. Both the falling cost of computers and the explosive growth of the Internet as a communications and information resource have increased awareness of the potential for information technology to be a tool for disseminating information.

Globalization itself was energized by new developments in information technologies. Advances in IT, knowledge and information sharing have transformed globalization process making the world a “global village” [7].

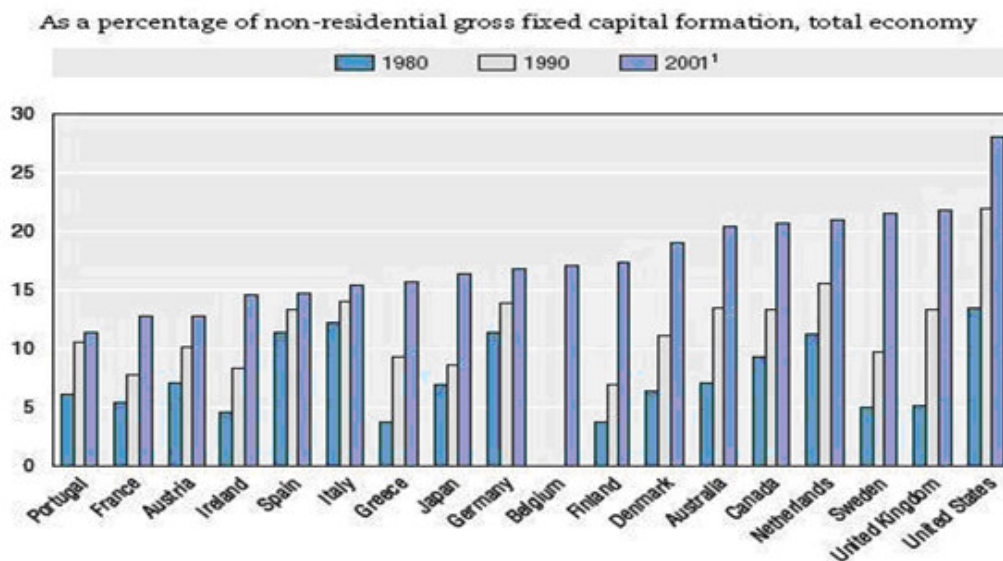
Information is the basis of a well-functioning system. Knowledge is the key agent for transforming both our global society and local communities. Sharing and strengthening knowledge can be enhanced by ensuring equitable access to information for educational, scientific activities, leading to a strong public domain of information.

IT have clearly made an impact on promoting economy, healthcare, education and business improving dissemination information, by facilitating collaboration and cooperation among professionals (including sharing of learning and training approaches) and by supporting more effective research and the dissemination and access to research findings. The flow of information and knowledge is shifting with increased access to the Internet, mobile phones, and data retrieval systems and that leads to adaptations in behavior.

### IT RAISES ECONOMIC GROWTH

The economic impact of IT is closely linked to the extent to which different IT technologies have diffused across economies. This is partly because IT is a network technology; the more people and firms that use the network, the more benefits it generates. The diffusion of IT currently differs considerably between countries, since some countries have invested more or have started earlier to invest in IT than other countries. A core indicator of IT diffusion is the share of IT in investment [1].

Investment in IT establishes the infrastructure for the use of IT and provides productive equipment and software to businesses. While IT investment has accelerated in most countries over the past decade, the pace of that investment differs widely. The data show that ICT investment rose from less than 15% of total non-residential investment in the early 1980s, to between 15% and 30% in 2001. In 2001, the share of IT investment was particularly high in the United States, the United Kingdom, Sweden, the Netherlands, Canada and Australia shown in Fig. 1. IT investment in many European countries was substantially lower than in the United States [1]. The high growth of IT investment has been fuelled by a rapid decline in the relative prices of computer equipment and the growing scope for the application of IT. Due to rapid technological progress in the production of key IT technologies, such as semi-conductors, and strong competitive pressure in their production, the prices of key technologies have fallen by between 15 and 30% annually, making investment in IT attractive to firms. The benefits of lower IT prices have been felt across the countries, as both firms investing in these technologies and consumers buying IT goods and services have benefited from lower prices. The lower costs of IT are only part of the picture; IT is also a technology that offers large potential benefits to firm, *e.g.* in enhancing information flows and productivity.



**Fig. 1** ICT Investment

A second determinant of the economic impacts associated with IT is the size of the IT sector, *i.e.* the sector that produces IT goods and services. Having an IT-producing sector can be important, since IT-production has been characterized by rapid technological progress and has been faced with very strong demand. The sector has

therefore grown very fast, and made a large contribution to economic growth, employment and exports [1].

### **THE ROLE OF IT IN STOCK MARKET**

Stock market is a fabulous category of financial instruments and one of the greatest tools ever invented for building wealth (Singh, 1999). Stocks are a part, if not the cornerstone, of nearly any investment portfolio. When you start on your road to financial freedom, you need to have a solid understanding of stocks and how they trade on the stock market.

Over the last few decades, the average person's interest in the stock market has grown exponentially. What was once a toy of the rich has now turned into the vehicle of choice for growing wealth? This demand coupled with advances in trading technology has opened up the markets so that nowadays nearly anybody can own stocks.

A stock market index is a method of measuring a section of the stock market. Many indices are cited by news or financial services firms and are used as benchmarks, to measure the performance of portfolios such as mutual funds (Singh, 1999).

The Internet and the web have transformed commerce, creating entirely new ways for retailers and their customers to make transaction for business to manage the flow of production inputs market products, and for job seekers and job recruiters to find each other.

Proper utilization of Information Technology can measure stock market index and also predict the growth or reduction of stock market index using different belief rules of Artificial Intelligence (AI) [2].

### **USES OF IT IN INTERNATIONAL COMMUNICATION**

Recent advances in our ability to communicate and process information in digital form a series of developments sometimes referred as "IT revolution" are reshaping the economy and industrial societies. The spread of IT and its applications has been exponentially growing. Just before 20 years ago, for example the use of desktop personal computers was still limited to a fairly small number of technologically advanced people. The majority of people still produced documents using typewriters which permit no manipulation of text and offer no storage. 15 years ago bulky mobile phone were carried only by a small number of users. Today there are billions of mobile phone users all over the world [5].

The electronic and print media also changes their way of presentation using Internet version. This Internet based communication is much easier for people with common interests to find each other, exchange information. Voice over Internet protocol (VOIP), electronic mail (e-mail), messenger and many other protocols help people to prompt communication all over the world.

### **IT RAISES ECONOMIC CRISIS**

The term financial crisis is applied broadly to a variety of situations in which some financial institutions or assets suddenly lose a large part of their value. In the 19th and early 20th centuries, many financial crises were associated with banking panics, and many recessions coincided with these panics. Other situations that are often called financial crises include stock market crashes and the bursting of other financial bubbles and currency crises [3]. Financial crises directly result in a loss of paper wealth; they do not directly result in changes in the real economy unless a recession or depression follows.

A survey of various experts in the fields of economics, information science, and artificial intelligence (AI) reveals general agreement that substantial responsibility for the global crisis belongs to people not programs; but beyond that, the consensus breaks down.

The effect of advances in information technology on the financial sector raises more questions than it answers: How can transactions understood by few; if any- experts be subject to effective government regulation? Is the current crisis a symptom of human dependency on information-processing machines created by man but now beyond man's control?

More immediately, these questions suggest the enormous complexities the next president will face. Starting immediately after Election Day, and the inherent difficulties in developing an effective and politically viable approach to dealing with them.

Computer models that are not well-understood by their users have certainly played a role in the crisis. In some ways the universities are at fault. Trained students to manipulate formulae and use algorithms without requiring them to understand the basic economics underlying the models and thus where the weaknesses in the models may lie. This is partly a response to student demands for easy courses with no abstractions or difficult concepts to master. It also is true that computers have enabled more complex financial instruments to be developed and traded, while also accelerating the speed with which disturbances are transmitted around the world.

Computers and computer models or their ignorant users are not the only source of the problem, however, and however with one comment government pressure to provide mortgages to unqualified buyers was also a significant factor [4].

Advances in IT are producing many changes in our society. These changes have produced many benefits, but

they have also raised several concerns. Innovations in IT have created new jobs, promoted the growth of new markets, and increased international trade and investment [4]. However, the expansion of IT also introduces costs. Workers in certain sectors of the economy lose their jobs as innovations in IT create a greater demand for high-tech workers and introduce efficiencies that make jobs obsolete. Another negative consequence of the IT revolution is the inequitable distribution of access to IT, called the digital divide.

If the new technologies are to fulfill their promise, these costs and concerns will need to be addressed. Experience with previous technologies suggests that prudent policies can help us effectively manage the risks associated with new technologies without harm to their benefits. Experience also suggests that the required policies must be developed through close consultation between government and private sector experts and stakeholders.

After the agricultural and industrial revolution, the new millennium has been celebrating another revolution which entirely different kind is taking place across the globe. It is nothing but Information and Communication Technology (ICT). The wave of the revaluation has also touched the developing countries like Bangladesh with massive changes.

### **DIGITAL BANGLADESH: PHASING OUT THE DIGITALIZATION PROCESS**

The Awami League led ruling government had pledged to turn the country as a Digital Bangladesh during their election campaign in the year 2008. ICT is the main tool of the government to fulfil their commitment of changing the old days and bringing new in that place. They have lots of opportunities to do in this field.

Bangladesh will be amidst a digital communication system many thousand times more efficient, speedy and powerful. It is noted that the ICT sector a large work force with different levels and various expertise is growing. Computer literacy is imparted, computer applications are taught, training given, diploma, bachelor's and master's degrees awarded.

However, the training centres, schools, colleges, computer institutes, private universities and public universities are all contributing in different ways. The related departments are IT, ICT, Computer Applications, Computer Science, Computer Engineering and Telecommunication Engineering.

The forces of globalization and technology are continuously reshaping our economy. The impact of information and communication technology (ICT) are giving rise to a new type of economy — the knowledge based economy. Technology has had a crucial role in defining today's globalized market structure. In this context, Bangladesh Prime Minister Sheikh Hasina has given the first step by declaring her vision towards "Digital Bangladesh". Bangladesh can make steady stride towards digitalization if guided by strategist capable to formulate short time, midterm & long term planning for the digitalization process. The concept of "Digital Bangladesh" must be understood clearly, practically and pragmatically in the context of a economy like Bangladesh. It is necessary to mention that in the short run "Digital Bangladesh" aims at E-Governance and service delivery through utilizing ICT. But the vision "Digital Bangladesh" encompasses the whole arena of a knowledge based Digital Economy. It is important to start digitalizing service delivery organs like Police, City corporation, Land Department, Tax Department, PDB, Water supply, Gas and other authorities also including sectors like Banking, Insurance, Customs, Tax Collection. Urgent steps should be taken to digitalize institutions like Bangladesh Bank, NBR, PSC, UGC, EC, ACC and other vital institution to go a step ahead towards Good Governance.

Bangladesh Government has taken the following steps to digitize the Bangladesh and to establish the Vision 2021:

#### **Govt. to Start Online Tax Payment**

Income tax return procedure would be brought under online system from September 5<sup>th</sup> 2010 to reduce public hassle in line with the government's vow to build digital Bangladesh.

#### **Bangladesh Railway (BR) to Expand E-ticket Service**

Bangladesh Railway (BR) planned to introduce electronic ticketing in additional eight stations by early September 2010 to meet growing demand of passengers ahead of Eid. Collect the printed copy of e-ticket from three stations -Kamlapur, Dhaka Airport and Chittagong, The railway authorities moved to expand operations to other important stations. Bangladesh Railway (BR) already allowed mobile phone operators Grameenphone and Banglalink to sell 10 per cent tickets through e-ticketing system as passengers' demand has increased significantly since the launching of the service.

#### **Automation in Banking Boosts GDP Growth**

The ongoing automation of the country's banking sector is expected to gear up the economic growth by at least 1 percent on its completion in around two-year time. Bangladesh Bank (BB) is carrying out an integrated automation program with assistance from the Department for International Development (DFID) under which two major components of the banking services will come under cyber technology by the year 2011.

#### **Broadband Internet for All Upazilas by 2012**

Every upazila of the country would be brought under broadband internet facilities through fiber optic cable by

2012 in line with realizing the government's pledge to build digital Bangladesh while speaking at a roundtable discussion titled 'Bangabandhu and Digital Bangladesh' organized by online newspaper the editor.com at CIRDP auditorium on August 26<sup>th</sup> 2010. Post and Telecommunication Minister Raziuddin Ahmed Raju was the Chief guest in this roundtable discussion.

The minister expressed that, 'e-education' and 'e-health' services through using digital devices would be expanded across the country by next year(2011). It has also plan to establish a digital university in Gazipur for building knowledge and IT based society. Besides, the third generation mobile already introduced and two more Wimax licenses by the year 2010.

#### **"E-Governance"**

E-governance would not only set up a bridge between different ministries by sharing information and data among themselves but also ensure transparency in government activities. A2I initiated "Digital Bangladesh Strategy Paper" in December 2009 on request from Science and ICT ministry for implementing government's Vision 2021. People have started getting benefits of digitization as online money transfer, registration, publication of results of public examinations through mobiles have already started in the country.

#### **Digitizing Land Management to Reduce Corruption**

Country's land administration at present lacks a transparent system that caused Taka 83 billion bribe in 2006 for land registration, mutation, and other land-related irregularities.

Government have taken the steps for digitizing land administration and expanding land related service to the citizens through digitizing record keeping system of land khatians and maps.

#### **E-Library for University Students**

By the year 2011, all the public universities and a few selected private universities would have high speed internet connectivity, e-lab facilities and a huge fund for improvement of skills of the faculties and researchers. All these facilities would be provided by UGC under a BDT 681 crore Higher Education Quality Enhancement Project, funded by the World Bank.

#### **E-Money Order/Mobile Money Transfer to be Expanded Soon**

The 'e-money order' service of the postal department will be extended to 1,600 post offices across the country by December the year 2010 for bringing the benefit of digital devices at the doorsteps of marginal people. At present, our 806 growth centers at district and upazila levels are offering the service that will be extended to grassroots level. The IT experts of the postal department have already developed software for operating the electronic money transfer. The software will be able to operate 23,000 to 24,000 transactions in one day. Presently, the postal department is providing the service of electronic remittance transfer through Western Money Union from its 450 post offices.

#### **Bangladesh to Launch Satellite**

Bangladesh will launch a satellite in the space with broadcasting facilities to make information and communication technology more available and upgrade to international standard. An inter-ministerial meeting was held on September 15<sup>th</sup> 2010 in this regard at the conference room of the Post and Telecommunications Ministry with its Minister Raziuddin Ahmed Raju in the chair. Speaking at the meeting, the post and telecommunications minister said launching of the country's own satellite is now the demand of the day to expedite implementation of Prime Minister Sheikh Hasina government's 'digital programs'. He stressed the need for quick implementation of the project and It would be implemented under public-private-partnership (PPP).

#### **First 'District E-service Centre' Launched**

'E-service centre', the first of its kind in the country, was launched in Jessore on September 16<sup>th</sup> 2010 through a function ushering in a new hope of taking all services of the district administration to the doorsteps of the people. The centre would ensure that all services and information of the administration are available through direct application or postal service even on online. National project director of the UNDP-funded Access to Information (A2I) Program under the Prime Minister's Office (PMO) will set up the centre in the Country.

#### **Digitize Jatiya Sangsad Library**

Steps have been taken to digitize the jatiya Sangsad Library which is enriched with rare books and valuable documents. As part of the measures, the work on preparing database for all books of the library.

#### **Public Universities Introduce Online Admission**

Most of the public universities of the countries have launched online admission processes the year 2010 for the first time. As a result, applicants can take and submit admission forms through websites without sending long queues. The system, through maiden to most of the universities, was introduced firstly in the Shahajalal University Science and Technology(SUST) last year and other Public Universities started the same system in 2010. The University of Chittagong also started online admission process with the help Teletalk company at end of the 2010.

#### **National University Goes Online**

National University (NU) went online as the university authorities started online registration activities for



master's first part (private) examinations for 2009 on August 24<sup>th</sup>. Interested students would be able to fill their registration forms through website [www.nu-bbs.info](http://www.nu-bbs.info). Meanwhile, the NU authorities extended the time for registration of Degree Pass Course (special) of 2009 under 2008- 09 academic year.

#### **VOIP License Issue from 2011**

The Government is going to issue VOICE over Internet Protocol License from 2011 to ensure smooth and cheap telecommunication which will stop the illegal VOIP connections. The Government will rent out E1 (an all-digital communication line that allows transmission of voice, data, video and graphics at high compared to standard communication lines) connections to the interested VOIP operators once the entire process is complete.

#### **WASA Mobile Bill Payment System**

Dhaka Water Supply and Sewerage Authority (WASA) in Association with CityCell officially launched its bill payment system through mobile phone on October 18<sup>th</sup> 2010 to facilitate mobile based water and sewerage bill payments with a view to reducing systems loss and boost up revenue collection.

#### **Hi-Tech park Construction Starting Soon**

The Government has taken initiative to set up a hi-tech park Kalikoir, near Dhaka and its implementation will begin soon with the appointments of contractors. Bangladesh Computer Council (BCC) was given responsibilities to finalize the tendering process for the project. It will many facilities to Foreign investors which include tax holiday for 10 years and tax Levitation for three years for foreigners. Gas, Water and Power supply will be ensure at a low cost in the 100 percent foreign investments.

#### **All Public Hospital Will connect Under IT Network**

The Government has taken steps to connect all public hospitals and Healthcare centers with Information Technology (IT) network side by side with modernizing to help the patients consult with specialist physicians. In this view, initially telemedicine were introduced in eight hospitals and web cams services were launched at the district level Hospitals. All upazilla hospitals will supply computers with Internet connection. The Patients from long distance may take advices from the specialist physicians free of cost from Dhaka. A total 18000 community clinics would be constructed across the country to reach better healthcare services.

#### **Digital Bangladesh Bank**

Bangladesh Bank (BB) has adopted advanced ICT to be digitized in all spheres of its functions including monetary policy, banking supervision and internal management. BB has already introduced E-commerce, E-banking, automated clearing house etc, a historic move towards achieving higher productivity across all economic sectors including agriculture and SME through use of ICTs. Digital technology makes doing things easily from any place-using mobile phone as a medium of money transfer and payment of utility bills. On 9<sup>th</sup> November 2010, Government of Bangladesh Bank introduced Mobile-Banking money transfer system for farmers.

#### **Bangladesh Bank Launches E-Tendering System**

Bangladesh Bank enters into the E-Tendering (electronic tendering) system, bringing an end to the traditional tendering process. The BB Governor Atur Rahman launched the system at the BBHQ in Dhaka on MAY 12<sup>th</sup>, 2010. The system is designed to ensure more transparency in the process. The bank has pioneered the E-Tendering system amongst public and private organization in Bangladesh.

#### **E-Voting in Chittagong City Corporation Polls**

The Election commission introduced Electronic Voting system on a limited scale in the Chittagong City Corporation election scheduled for June 17<sup>th</sup> 2010. The EC made the decision on MAY 17<sup>th</sup> 2010 after experts from Bangladesh University of Engineering and Technology (BUET) agreed to provide technical assistance for smooth operation of E-voting machines. The system introduced in ward 21 with 14 polling stations in Jamalkhan of the City Corporation. Over 25,000 voters in the areas cast three votes each by the new method- one for Mayoral candidate and two for ward councilors. The Election commission has a plan to take the next Parliamentary election with E-Voting system.

#### **eTextbooks for Students**

The government launched a website with digital versions of textbooks for primary and secondary Students to give free access to textbooks online. At least 106 r of primary and secondary levels have been converted to e-books, electronic version of textbooks, published by the National Curriculum and Textbooks Board (NCTB) and uploaded on [www.ebook.gov.bd](http://www.ebook.gov.bd) with the technical Assistance of Access to Information (A2I) of Prime Minister's Office (PMO).

#### **Mobile Remittance**

In a revolutionary step on April 13, 2011, mobile remittance service or mRemittance was introduced in the country, convert people's money into cash. The first ever mRemittance service for Bangladesh was jointly launched by two local banks – Dhaka Bank Ltd and Eastern Bank Ltd- and the country's second largest mobile operator, Banglalink.

## CONCLUSIONS

Almost every state is heading towards a Knowledge based society and Bangladesh cannot stay away from the advantages out of it. Though it is very easy to speak about such dream i.e. making country Digital, but at the same time it is very difficult to implement it. For implementation, it is basically the Government who will take initiatives while the other political parties also need important role. Moreover, Bangladesh needs an efficient innovation system of industry, science and research centers and universities to create new knowledge and technology. In this regard, we need an effective higher education system that provides specialized training, education and research. At the end, it is the expectation of the mass people that the government will take all possible steps to create a SMART (simple, measurable, accountable, responsive and transparent) “Digital Bangladesh” and establish a knowledge-based society with in short time.

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